

## **REMARKS/ARGUMENTS**

### ***Introduction***

Receipt of the Office Action mailed December 6, 2006 is acknowledged. Reconsideration of this application is requested. The claims presented for reconsideration are claims 1-20. Favorable reconsideration is earnestly solicited.

### ***Section 132 Declaration***

Applicant notes that the declaration submitted contemporaneously herewith remains unsigned by the co-inventor and author, Michel Garat. The declaration remains unsigned due to the fact Mr. Garat was very recently physically injured in an accident that rendered him unavailable to sign the declaration. Mr. Garat will sign the declaration as soon as possible. Applicant's attorney will submit the aforementioned declaration upon receipt. Applicant wishes to thank the Examiner for understanding such extenuating circumstances.

### ***Claim Rejections - 35 U.S.C § 103(a)***

The Examiner rejects claims 1-20 under 35 U.S.C § 103(a) being unpatentable over FR 2690927. The Examiner states that the FR' 927 reference teaches an aluminum casting part with an overlapping alloy composition. Upon this premise, the Examiner believes that it would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art. This rejection is respectfully traversed.

An obviousness rejection is overcome by a showing of unexpected results relative to the prior art's teachings. In general, an applicant may overcome a *prima facie* case of obviousness by establishing that the claimed range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Geisler*, 116 F.3d 1469-70, 43 USPQ2d1365 (Fed. Cir. 1997). This rebuttal may take the form of a comparison of test data showing that the claimed compositions possess

unexpectedly improved properties that the prior art does not have so that the prior art is so deficient that there is no motivation to make what might otherwise appear to be obvious changes. *In re Dillon*, 919 F.2d 688, 692 [16 USPQ2d 1897] (Fed. Cir. 1990) (en banc). That same standard applies when the applicant seeks to optimize certain variables by selecting narrow ranges from broader ranges disclosed in the prior art. *See In re Geisler*, 116 F.3d at 1470, 43 USPQ2d at 1365.

It is respectfully submitted that the testing and analysis performed Mr. Garat clearly illustrates that the claimed invention is not taught by FR '927.<sup>1</sup> Moreover, the cast part recited in claim 1 is not obvious over FR '927 because the present cast part demonstrates physical properties that differ from those described in FR '927 to such an extent that the differences are truly unexpected. As set forth in the declaration filed herewith, unexpected results are obtained for key physical properties such as hot creep resistance and ductile elongation through the use of alloys having differing ranges of elements and overall compositions in comparison to those alloys described in FR '927.

As explained in the accompanying declaration, it is both difficult and unexpected to achieve satisfactory creep resistance at hot temperatures without harming ductility. FR '927 describes alloys requiring the addition of Titanium, Zirconium and Vanadium to improve their creep resistance at high temperature (see page 5, lines 6 to 12 of FR '927). In contrast to those alloys described in FR '927, the alloy recited in claim 1 achieves surprising and unexpected improvements on hot creep resistance over the base AlSiCuMg type alloy while retaining high ductility both at room and at elevated temperatures without the addition of Vanadium (see paragraphs 9-11 of the Garat Declaration; see pages 5-7 of FR '927).

In conclusion, the obviousness rejection should be withdrawn because FR '927 fails to teach or suggest that hot creep resistance may be improved while maintaining ductility without the addition of Vanadium to the differing AlSiCuMg type alloy of claim

---

<sup>1</sup> The teachings FR '927 have been opined upon by Mr. Garat, and an unsigned declaration by Mr. Garat is submitted herewith (signed declaration to follow as explained above). Thus, the characterizations by Mr. Garat, as one of ordinary skill in the art, should be given weight in determining the scope and content of the prior art relied upon in the instant rejection. A translation of FR '927 and corresponding certification are filed contemporaneously herewith.

1. Furthermore, the alloy recited in claim 1 is shown to produce both an unexpected and improved hot creep resistance in comparison to what would have been expected for a AlSiCuMg type alloy containing an addition of Zirconium without the simultaneous addition of Titanium and Vanadium. Lastly, retaining high ductility in a AlSiCuMg type alloy upon the conscious addition of Zirconium is surprising to one of ordinary skill in the art. For all these reasons, it is respectfully submitted that the §103 rejection based on FR '927 is improper and should be withdrawn.

Appl. No. 10/518,597  
Amdt. dated April 6, 2007  
Reply to Office action of December 6, 2006

---

**CONCLUSION**

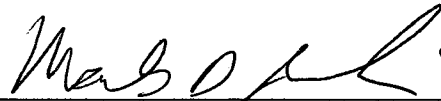
It is also respectfully requested that the Examiner expeditiously notify Applicant's undersigned attorney as to the disposition of the remarks presented herein in accordance with M.P.E.P. § 714.13.

Any comments or questions concerning the application can be directed to the undersigned at the telephone number given below.

Please find enclosed a petition for an Extension of Time sufficient and authorization to charge the amount required to effect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 09-0528 (Docket #: A242 1090.US).

Respectfully submitted,

Date: April 6, 2007



---

Susan E. Shaw McBee  
Registration No. 39,294  
Mark D. Jenkins  
Registration No. 59,566  
Womble Carlyle Sandridge & Rice, PLLC  
P.O. Box 7037  
Atlanta, GA 30357-0037  
Direct Phone: (703) 394-2274  
Fax: (703) 790-2623  
E-Mail: mjenkins@wcsr.com